VANADIUM CORPORATION OF AMERICA
(VCA) NATURITA MILL, GRINDING/ROD MILL
approximately three miles northwest of Naturita,
between Colorado State Highway and
the San Miguel River
Vicinity of Naturita
Montrose County
Colorado

HAER No. CO-81-D

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43-NATU.V
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PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

Historic American Engineering Record
National Park Service
Department of the Interior
Denver, Colorado 80225-0287

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HISTORIC AMERICAN ENGINEERING RECORD

VANADIUM CORPORATION OF AMERICA (VCA) NATURITA MILL,
GRINDING/ROD MILL HAER No. CO-81-D

Location: In northeast quadrant of mill complex, northwest of Sampling Building (north of Office Building, approximately three miles northwest of Naturita, between Colorado State Highway 141 to the southwest and the San Miguel River to the northeast; in the NW1/4 of the SW1/4 of Section 14, Township 46 North, Range 16 West

Date of Construction: 1960-61

Designer: VCA Drafting Department - Durango

Builder: Built by VCA employees working under the direction of Troy Newland, master mechanic, Tom Kelly, assistant master mechanic, and Bob Newland, mill supervisor

Present Owner: Cyprus-Amax Minerals Corporation, 9100 E. Mineral Circle, Englewood, CO, 80112

Present Use: Vacant / Not in Use

Significance: The VCA Naturita Mill Grinding / Rod Mill was constructed in 1960-61 as part of an effort to reconstruct the facility as an experimental uranium and vanadium ore concentrating facility. Between 1958 (when the milling operation had closed) and 1961, VCA had been paying miners to ship raw ore to the company's Durango mill. By first concentrating the ore at Naturita, VCA hoped to greatly reduce the volume of ore shipped to Durango, and correspondingly reduce the company's shipping costs. In the end, however, the cost to concentrate the ore at Naturita was greater than the savings gained by reducing the tonnage shipped to Durango. As a result, the concentrating facility was not in operation for long. It closed in early 1963. During this two year period, the Grinding / Rod Mill was utilized in the concentrating process. When the ore arrived at the mill, it was first deposited at the Weighing Station and Office where it was allotted a serial number identifying who produced it and where it had been mined. From the Weighing Station and Office, the ore was brought to the Sampling Building, where it was sorted, crushed, and a small percentage was separated out to be chemically analyzed in an assaying process.

The main ore body, meanwhile, was placed in concentration storage tanks. The ore was then drawn from these tanks into the Grinding / Rod Mill where it was crushed to an extremely fine mesh. After being crushed, the ore was next agitated in an acid and water solution. This

agitation process, known as an "acid crack," was designed to separate the "values" (the uranium and vanadium) from the outside of the sand particles that comprised the ore. The values were then pumped into thickener tanks where it was thickened, while the byproducts were pumped to the tailings pile. From the thickener tanks, the values were next placed in dryers which resulted in the formation of a uranium and vanadium concentrate in the form of dry, marble-sized, pellets. This material was placed in large concrete storage bins from where it was picked up by a rubber-tired loader and deposited into trucks for transport to VCA's mill in Durango.

General Description: The Grinding/Rod Mill was a single-story, large rectangular building, constructed of a rigid steel framework of tapered post and beam, connected with steel "z" channels at four foot centers, sitting on a concrete slab. The building's roof was a moderately-sloped, front-facing gable. Walls and roof were both sheathed with a "standing seam" profile corrugated sheet metal.

One large equipment door, constructed of the same corrugated metal, was located at the northwest end, near the northeast corner. Another door, accessing a catwalk at the southeast end, was hollow metal. There were no windows, although a circular opening at the southeast gable end, presumably a large ventilation fan location.

A steel stair and catwalk system lead from a raised concrete platform on the southeast exterior to the rod mill in the east corner of the building. In addition to housing the rod mill, grinding equipment, attrition cells, classifier cells and filter (all removed at time of field survey), the building housed three large generators along the center southwest wall. The large concrete rod mill base, and other concrete platforms and housings, were the remaining vestiges of equipment which had been salvaged for use at other locations.